

REMARKS

Introduction

In response to the Office Action dated January 14, 2008, Applicants have amended claim 23. Claim 23 has been amended to address the antecedent basis issue identified by the Examiner. Care has been taken to avoid the introduction of new matter. In view of the foregoing amendments and the following remarks, Applicants respectfully submit that all pending claims are in condition for allowance.

Claim Rejection Under 35 U.S.C. § 112

Claim 26 was rejected under 35 U.S.C. §112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The Office Action states that it is unclear where in the specification there is support for utilizing changing magnet sizes in combination with changing target to substrate spacing. The Office Action states if there is support, it is requested that the Applicant point to the page and line number to show the support.

The observation of a lack of literal support does not, in and of itself, establish a prima facie case for lack of adequate descriptive support under the first paragraph of 35 U.S.C. § 112. *Ex parte Parks*, 30 USPQ 2d 1234, 1236–37 (B.P.A.I. 1993). Rather, it is sufficient if the originally-filed disclosure would have conveyed to one having ordinary skill in the art that Applicants had possession of the concept of what is claimed.

Moreover, it is respectfully submitted that at least Fig. 3A and 3B and pg. 9, lines 5-8 and pg. 11, lines 9-13 of the originally filed specification describe claim 26.

Based on the foregoing, it is respectfully submitted that claim 26 and its functionality is fully described by Applicants' specification. Applicants submit that there is no issue of new matter surrounding the instant claims. Accordingly, it is respectfully requested that the rejection under 35 U.S.C. § 112, first paragraph be withdrawn.

Claim 23 was rejected under 35 U.S.C. § 112, second paragraph, as purportedly being indefinite.

The antecedent basis issue identified by the Examiner with respect to claim 23 has been addressed in the foregoing amendment of claim 23.

Claim Rejection Under 35 U.S.C. § 102

Claims 1, 24, 27, 28, 31, and 32 were rejected under 35 U.S.C. § 102 (b) as being anticipated by JP 2000-057640 to Akiyama et al. (hereinafter Akiyama).

The Office Action asserts that Akiyama teaches a cathode sputtering apparatus for forming a uniform thickness layer of a selected material on at least one workpiece in a multi-stage process including depositing a plurality of sub-layers. The Examiner opines that Akiyama teaches a first group of spaced-apart cathode target assemblies (2, 3) including annular-shaped magnetron magnet assemblies having a magnet diameter of 160 mm and 200 mm.

Turning to the prior art, Akiyama is *silent* regarding a group of annularly-shaped magnetron magnet assemblies, as required by independent claims 1 and 24. Akiyama discusses a disc-like polycarbonate substrate with an outer diameter of 120 mm. Akiyama describes the magnet to be "disc-like" and having an outer diameter. Fig. 2 of Akiyama shows a disc-shaped magnet 13, not an annular shaped magnet. An annularly-shaped magnet assembly requires inner and outer diameters to form a ring or donut-shaped structure. Akiyama *only* describes an outer

diameter of the magnet. Akiyama fails to disclose or suggest, "...a first group of spaced-apart cathode/target assemblies comprising annular-shaped magnetron magnet assemblies," as recited in claim 1. Further, Akiyama fails to disclose or suggest, "...the annular-shaped magnetron magnet assemblies have progressively increasing diameters," as recited in claim 1. Akiyama fails to disclose or suggest, at a minimum, "...a group of spaced-apart deposition stations having a first group of annularly-shaped magnetron magnet assemblies, each annularly-shaped magnetron magnet assembly having at least one diameter corresponding to a thickness profile for depositing the selected material," as recited in claim 24. Akiyama fails to disclose or suggest, "...wherein the thickness profile for each annularly-shaped magnetron magnet assembly is different," as recited in claim 24.

As anticipation under 35 U.S.C. § 102 requires that each and every element of the claim be disclosed, either expressly or inherently (noting that "inherency may not be established by probabilities or possibilities," *Scaltech Inc. v. Retec/Tetra*, 178 F.3d 1378 (Fed. Cir. 1999)), in a single prior art reference, *Akzo N.V. v. U.S. Int'l Trade Commission*, 808 F.2d 1471 (Fed. Cir. 1986), based on the forgoing, it is submitted that Akiyama does not anticipate claims 1 and 24, nor any claim dependent thereon. The dependent claims are allowable for at least the same reasons as claims 1 and 24.

Claim Rejections Under 35 U.S.C. § 103

Claims 1-4, 6, 7, 11, 13, 15-17, 20, 24, 25, 29, and 30 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Akiyama in view of Hedgcoth (U.S. Patent No. 4,894,133). It is respectfully submitted that the Examiner's rejection of claims 1-4, 6, 7, 11, 13, 15-17, 20, 24, 25, 29, and 30 fails to set forth a prima facie obviousness case.

As a preliminary matter, the Office Action asserts arguments with respect to claims 8, 9, and 18. Claims 8, 9, and 18 were cancelled in the Amendment filed on October 29, 2007. On page 8, the Office Action states, “[i]t would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified **Kobayashi et al.** by utilizing the features of Hedgcoth because it allows for producing magnetic disks” (*emphasis added*). Kobayashi et al. was **not** cited in the 103 rejection of claims 1-4, 6, 7, 11, 13, 15-17, 20, 24, 25, 29, and 30 in the instant Office Action. Applicants request clarification of the foregoing.

The Office Action admits that Akiyama does not discuss: rearranging the order of magnets; a second set of targets to coat a second side of the substrate; cathode targets being in substantial vertical registry; cathode/target assemblies of the first and second groups of cathode/target assemblies located within a single vacuum chamber; cathode/target assemblies of the first and second groups of cathode/target assemblies forming an in-line or circular-shaped arrangement within the vacuum chamber; cathode/target assemblies of the first and second groups of cathode/target assemblies are located in a plurality of vacuum chambers; the plurality of vacuum chambers forming an in-line or a circularly-shaped arrangement of chambers; each cathode/target assembly of the first and second groups of cathode/target assemblies is a planar magnetron cathode/target assembly including a magnetron magnet means; the magnetron magnet means of at least some of the planar magnetron cathode/target assemblies are of different lengths, widths, or diameters; means for transporting the at least one substrate/workpiece past the first and second groups of cathode/target assemblies for deposition of the first, second pluralities of sub-layers includes means for mounting and transporting at least one disk-shaped substrate/workpiece; forming perpendicular magnetic recording medium; and the inner and outer diameter of the magnets are not discussed. The Office Action relies on Hedgcoth in an attempt

to cure the deficiencies of Akiyama. The Office Action asserts that Hedgcoth teaches forming a perpendicular magnetic recording medium.

Although not relied upon to do so, Hedgcoth fails to disclose or suggest annularly-shaped magnetron magnet assemblies, as required by independent claims 1, 13, and 24. Thus, Hedgcoth does not cure the deficiencies of Akiyama.

Neither Akiyama nor Hedgcoth, individually or combined, disclose or suggest, annularly-shaped magnetron magnet assemblies, as required by independent claims 1, 13, and 24.

Further, contrary to the Examiner's assertion, Hedgcoth does not discuss depositing a perpendicular magnetic recording medium on a magnetically soft underlayer. Hedgcoth fails to disclose or suggest, at a minimum, transporting at least one substrate for a perpendicular magnetic recording medium, as required in independent claim 13.

Neither Akiyama nor Hedgcoth, individually or combined, disclose or suggest, transporting at least one substrate for a perpendicular magnetic recording medium, as required in claim 13.

Claims 12 and 21 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Akiyama in view of Hedgcoth, and further in view of U.S. Patent No. 5,441,615 (hereinafter Mukai). Claims 12 and 21 depend from claims 1 and 13, respectively, and include all of the features of their base claim plus additional features, which are not taught or suggested by the cited references. Therefore, for at least these reasons, it is respectfully submitted that claims 12 and 21 are also patentably distinguishable over the cited references.

Claim 26 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Kobayashi in view of Hedgcoth, and further in view of JP 56-152963 to Kobayashi et al. (hereinafter JP '963). As an initial matter, the instant Office Action cites "Kobayashi" twice without citing a patent

document or non-patent literature reference in the first instance. Further, the instant Office Action cited Akiyama as the primary reference in the rejections of claims 1, 24, 27, 28, 31, and 32 under 35 U.S.C. § 102 (b), and claims 1-4, 6, 7, 11, 13, 15-17, 20, 24, 25, 29, and 30 under 35 U.S.C. § 103(a) , not Kobayashi. The instant Office Action did not discuss Akiyama or the deficiencies of Akiyama with respect to claim 26. Applicants request clarification of the foregoing.

Although not relied upon to do so, Kobayashi '963 is *silent* on a first group of annularly-shaped magnetron magnet assemblies. Kobayashi '963 is also *silent* regarding each annularly-shaped magnetron magnet assembly having a diameter corresponding to a thickness profile for depositing the selected material. Further, there is no teaching, suggestion, or motivation either implicitly or explicitly in Kobayashi '963 of annularly-shaped magnetron magnet assemblies or their diameter corresponding to a thickness profile for depositing the selected material. Kobayashi '963 fails to disclose or suggest, at a minimum, "...a first group of spaced-apart cathode/target assemblies comprising **annular-shaped** magnetron magnet assemblies," as recited in claim 1.

Neither Hedgcoth nor Kobayashi '963, individually or combined, disclose or suggest, "...a transportation unit for transporting at least one substrate/workpiece for a **perpendicular magnetic recording medium**," as recited in claim 1.

Based upon the arguments submitted *supra*, it should be apparent that a *prima facie* basis to deny patentability to the claimed invention has not been established for want of the requisite factual basis. Moreover, there are potent indicia of nonobviousness of record to support the patentability of the present claimed subject matter. Indeed, the advantageous effect of the

present invention including the perpendicular magnetic recording medium, is unknown to the prior art of record. Accordingly, the rejection of claim 26 should be withdrawn.

Claim 23 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Kobayashi in view of Hedgcoth, and further in view of U.S. Patent No. 5,326,637 to Nasu et al. As stated above, Applicants request clarification with respect to the newly cited reference Akiyama.

Claim 23 depends from claim 13 and includes all of the features of their base claim plus additional features, which are not taught or suggested by the cited references.

Withdrawal of the foregoing rejections is respectfully requested.

Conclusion

In view of the above amendments and remarks, Applicants submit that this application should be allowed and the case passed to issue. If there are any questions regarding this Amendment or the application in general, a telephone call to the undersigned would be appreciated to expedite the prosecution of the application.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper,

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including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

McDERMOTT WILL & EMERY LLP

A handwritten signature in black ink, appearing to read "Bernard P. Codd". The signature is fluid and cursive, with the first name "Bernard" and last name "Codd" clearly distinguishable.

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